WHAT IS CLAIMED IS:

1. A method for producing hardened structural parts from sheet steel, comprising the following method steps:

a) shaping of shaped parts made of sheet steel provided with cathodic corrosion protection, wherein

b) prior to, during or after shaping of the shaped part a required final trim of the shaped part and possibly required punching, or the creation of a perforation pattern, are performed, wherein

c) subsequently the shaped part is heated, at least over partial areas, under the admission of atmospheric oxygen to a temperature which permits austenizing of the steel material, and

d) thereafter the structural part is transferred to a mold-hardening tool and mold-hardening is performed in the mold-hardening tool, wherein the structural part is cooled by the contact with and pressing by the mold-hardening tools and is hardened thereby.

2. The method in accordance with claim 1, characterized in that the cathodic corrosion-protection coating is a coating being applied by means of a hot-dip galvanizing method, wherein the coating substantially consists of a mixture of zinc, and the mixture moreover contains one or several elements with affinity to oxygen in a total amount of 0.1 weight-% to 15 weight-% in relation to the entire coating, and wherein in the course of heating the sheet steel to the temperature required for hardening, a skin

of an oxide of the element(s) with affinity to oxygen is formed on its surface.

3. The method in accordance with claim 1 or 2, characterized in that magnesium and/or silicon and/or titanium and/or calcium and/or aluminum are employed as the elements with affinity to oxygen.

4. The method in accordance with one of the preceding claims, characterized in that 0.2 weight-% to 5 weight-% of the elements with affinity to oxygen are used.

5. The method in accordance with one of the preceding claims, characterized in that 0.26 weight-% to 2.5 weight-% of the elements with affinity to oxygen are used.

6. The method in accordance with one of the preceding claims, characterized in that aluminum is substantially employed as the element with affinity to oxygen.

7. The method in accordance with one of the preceding claims, characterized in that the coating mixture is selected in such a way that, in the course of heating, the coating forms an oxide skin of oxides of the element(s) with affinity to oxygen and the coating forms at least two phases, wherein a zinc-rich and an iron-rich phase are formed.

8. The method in accordance with one of the preceding claims, characterized in that the iron-rich phase is formed at a ratio of zinc to iron of at most 0.95 ($Zn/Fe \leq 0.95$), preferably of 0.20 to 0.80 ($Zn/Fe = 0.20$ to 0.80), and the zinc-rich phase at a ratio of zinc to iron of at least 2.0 ($Zn/Fe \geq 2.0$), preferably of 2.3 to 19.0 ($Zn/Fe = 2.3$ to 19.0).

9. The method in accordance with one of the preceding claims, characterized in that the iron-rich phase has a ratio of zinc to iron of approximately 30:70, and the zinc-rich phase has a ratio of zinc to iron of approximately 80:20.

10. The method in accordance with one of the preceding claims, characterized in that in addition the layer contains individual areas with zinc proportions > 90% zinc.

11. The method in accordance with one of the preceding claims, characterized in that the coating is designed in such a way that, at an initial thickness of 15 μm, the coating has a cathodic protection effect of at least 4 J/cm^2 after the hardening process.

12. The method in accordance with one of the preceding claims, characterized in that the coating with the mixture of zinc and the elements with affinity to oxygen takes place in the course of a passage through a liquid metal bath at a temperature of 425°C to 690°C with subsequent cooling of the coated sheet.

13. The method in accordance with one of the preceding claims, characterized in that the coating with the mixture of zinc and the elements with affinity to oxygen takes place in the course of a passage through a liquid metal bath at a temperature of 440°C to 495°C with subsequent cooling of the coated sheet.

14. The method in accordance with one of the preceding claims, characterized in that a layer is used as the cathodic corrosion-protection layer which has a constant layer thickness over the structural part.

15. The method in accordance with one of the preceding claims, characterized in that shaping and trimming, as well as punching and the arrangement of a perforated pattern on the structural part are performed in such a way that the shaped part is embodied to be 0.5% to 2.0% smaller than the finished structural part, and preferably 1% smaller than the finished structural part.

16. The method in accordance with one of the preceding claims, characterized in that the time above the austenizing temperature is up to 10 minutes.

17. The method in accordance with one of the preceding claims, characterized in that the holding temperature in the heating phase is maximally 780 to 950°C.

18. The method in accordance with one of the preceding claims, characterized in that the heat expansion of the finished shaped part following shaping and trimming, or punching, during the heating process are taken into consideration in the course of the dimensioning of the structural part, and in particular while shaping and trimming the structural part, in such a way, that at the end of heat expansion the structural part takes on the target dimension, or target geometric shape or is slightly larger.

19. The method in accordance with one of the preceding claims, characterized in that in the course of mold-hardening the areas of close tolerance of the shaped structural part, in particular the cut edges, the shaped edge and the perforation pattern, are clamped free of warping by the molding tool halves, wherein shaped part areas located outside the areas of close tolerance can be subjected to a

further shaping step in the hot state.

20. The method in accordance with one of claims 1 to 17, characterized in that the shaped part is pressed and hardened by the molding tool halves substantially simultaneously over the full surface and with the same force.

21. A structural sheet steel part with a cathodic corrosion-protection coating, produced by means of a method in accordance with one of the preceding claims.

22. The structural sheet steel part in accordance with claim 21, characterized in that the sheet steel of which the structural part is made has a sturdiness of between 800 and 2000 MPa.

23. The structural sheet steel part in accordance with claim 21 and/or 22, characterized in that the structural sheet steel part has a corrosion-protection layer, wherein the corrosion-protection layer is a corrosion-protection layer which was applied by means of a hot-dip galvanizing method and the coating substantially consists of a mixture of zinc, and the mixture moreover contains one or several elements with affinity to oxygen in a total amount of 0.1 weight-% to 15 weight-% in relation to the entire coating, wherein the corrosion-protection layer has an oxide skin of oxides of the element(s) with affinity to oxygen, and the coating has at least two phases, wherein a zinc-rich and an iron-rich phase are provided.

24. The structural sheet steel part in accordance with one of claims 21 to 23, characterized in that the corrosion-protection layer contains magnesium and/or silicon and/or titanium and/or calcium and/or aluminum as the elements with

affinity to oxygen in the mixture.

25. The structural sheet steel part in accordance with one of claims 21 to 24, characterized in that the iron-rich phase has a ratio of zinc to iron of at most 0.95 ($Zn/Fe \leq 0.95$), preferably of 0.20 to 0.80 ($Zn/Fe = 0.20$ to 0.80), and the zinc-rich phase has a ratio of zinc to iron of at least 2.0 ($Zn/Fe \geq 2.0$), preferably of 2.3 to 19.0 ($Zn/Fe = 2.3$ to 19.0).

26. The structural sheet steel part in accordance with one of claims 21 to 24, characterized in that the iron-rich phase has a ratio of zinc to iron of approximately 30:70, and the zinc-rich phase has a ratio of zinc to iron of approximately 80:20.

27. The structural sheet steel part in accordance with one of claims 21 to 26, characterized in that in addition the structural steel sheet part contains individual areas with zinc proportions > 90% zinc.

28. The structural sheet steel part in accordance with one of claims 21 to 27, characterized in that the corrosion-protection layer, at an initial thickness of 15 µm, has a cathodic protection effect of at least 4 J/cm^2.

29. The structural sheet steel part in accordance with one of claims 21 to 28, wherein the structural element is formed out of a cold- or hot-rolled steel tape of a thickness of > 0.15 mm and within the concentration range of at least one of the alloy elements within the following limits in weight-%:

Carbon	up to 0.4	preferably 0.15 to 0.3

Silicon	up to 1.9	preferably 0.11 to 1.5
Manganese	up to 3.0	preferably 0.8 to 2.5
Chromium	up to 1.5	preferably 0.1 to 0.9
Molybdenum	up to 0.9	preferably 0.1 to 0.5
Nickel	up to 0.9	
Titanium	up to 0.2	preferably 0.02 to 0.1
Vanadium	up to 0.2	
Tungsten	up to 0.2	
Aluminum	up to 0.2	preferably 0.02 to 0.07
Boron	up to 0.01	preferably 0.0005 to 0.005
Sulfur	0.01 max.	preferably 0.008 max.
Phosphorus	0.025 max	preferably 0.01 max.

the rest iron and impurities.